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Original Communications.

HOMICIDES BY CHLOROFORM.

By "INNOMINATUS."

"WE regret having to record another death from the administration of chloroform. The unfortunate circumstance occurred on Wednesday, at the Middlesex Hospital. The patient, a man about 30 years old, was about to undergo a slight but painful operation for diseased bone, and was yet only partially under the influence of the anæsthetic when death suddenly took place. Every means were at once taken and persevered in for half an hour to revive the patient, but without avail. The chloroform was administered by Mr. Osman Vincent, chloroformist to the Hospital, who has had very considerable experience in anæsthetics."

The above is from the *British Medical Journal*, "being the Journal of the British Medical Association," for January 1st, 1870. Well may it "regret" such an "unfortunate circumstance," inasmuch as almost every journal furnishes "another death" by the same agent; and the whole number of victims to national prejudice already amounts to several hundreds. Why not call the administration of chloroform for such purposes by its true name, homicide, since there is an agent equally effective, and known to be perfectly safe. Yet one would think, on reading British medical periodicals, that such a thing as sulphuric ether was entirely unknown in the United Kingdom. A trial for manslaughter with a New England jury would bring British practitioners to a quickened sense of responsibility in the matter, and prove an effectual remedy to the recurrence of any similar "unfortunate circumstance." Notice that "the chloroform was most carefully administered" by one "who has had very considerable experience," and that the patient "was yet only partially under the influence of the anæsthetic when death suddenly took place." None of the usual subterfuges were possible in this case, no carelessness, no inexperience, no overdose. With such, and scores of such cases, continually recurring, how is it possible that medical men, taught to hold human life in absolute and supreme respect, can continue from any motive to use an agent *in itself* so poisonous and deadly, when another is at hand quite as good in anæsthetic power, and innocuous?

As if to tell the world that further argument is useless and that all else is to be thoroughly ignored, the same number of the *British Medical Journal* re-publishes the following "memoranda," which we copy to show what acknowledged dangers the British patient must be exposed to, to gratify a cherished prejudice of his countrymen. Would that "flipping with a towel," or a more powerful excitant, could awaken "the operator" to a truer sense of his duty, or possibly reach, if not calloused to another's risks, "even the heart itself."

So fearful is the picture therein presented that it makes one shudder merely to read the official—

MEMORANDA RESPECTING

THE ADMINISTRATION OF CHLOROFORM.

[*From the British Medical Journal, Dec.* 4, 1869.]

PRELIMINARIES.

1. Unless very feeble, the patient should fast for three hours before the inhalation.

2. Twenty minutes before the inhalation, a dose of brandy should be given in water—a teaspoonful to a child, one or two tablespoonfuls to an adult.

3. The patient should, whenever convenient, be wholly undressed, and, invariably, everything tight about the chest or neck should be removed.

4. If possible, let the patient be in the recumbent posture, and on his back. Let the chest and neck be well exposed. Whatever form of apparatus be used (a piece of lint, a handkerchief, and Skinner's inhaler, are perhaps among the best), there is little or no risk with the first inhalations; and the patient may be instructed "to draw full breaths." So soon as any effect is manifest, you must be more cautious. Watch carefully the respiratory movements, and

the color of the cheeks, lips, and eyes. When convenient, keep your finger on the wrist-pulse; but this is not essential. If the patient struggle much, proceed with increased caution.

SIGNS OF DANGER.

Lividity of Face.—Remove the chloroform, and let the patient have air. Open the mouth and draw out the tongue.

Stertorous Respiration.—Stop the chloroform, open the mouth, draw forward the tongue, and watch carefully.

Irregular Gasping Respiration.—Stop the chloroform, splash cold water on the face, and flip with the towel.

Feeble Pulse.—Proceed with great caution. If the feebleness amount to almost complete failure, stop the administration.

Death-like Pallor.—This, the most dangerous sign of all, must be met without a moment's loss of time. Flip with the wet towel on the cheeks, chest, abdomen, and limbs. Open the mouth, and if, as is usual, breathing has ceased, begin artificial respiration at once. With outspread palms, press the front of the chest forcibly down, whilst an assistant, at the same time, presses the abdomen. Make these movements not oftener than fifteen times in the minute. Air should be heard to enter the trachea. Whilst this is being done, let assistants continue most vigorously to flip the skin in all accessible positions—it cannot be done too much. If the collapse continue, let an ounce of brandy be injected into the rectum. Do not remit the artificial respiration until the patient is quite rallied. If the collapse persist, the efforts at rallying should be persevered with for an hour at least. If a large catheter be at hand, it may be well to introduce it into the trachea, and inflate the lungs by the mouth. Remember that irregular inspiratory efforts may occur long after death in all other respects has apparently taken place. Do not be deceived by them, but continue your efforts.

REMARKS.

The plan of artificial respiration recommended is, we believe, all things considered, the most convenient. The catheter in the trachea is, when practicable, the most effectual plan. Its introduction is not difficult. If the artificial inspirations be made too rapidly, they defeat their own object; nor should they be too forcibly made. If it be needful to continue them more than a few minutes, the operator will find it convenient to kneel astride the patient's trunk.

The administrator ought always to have with him brandy, an enema-syringe, and a large flexible catheter. He ought always, when convenient, to require his patient to be undressed, since it may be very desirable to have the surface accessible.

By "flipping with the towel," we mean twitching the corner of a damp towel in such a manner as to cause the sharpest pain possible. It is by far the most effectual method of awakening a chloroform patient, and should, in case of danger, be practised instanter, and at several parts at once. Its effect is to excite locally the capillary circulation, and indirectly to stimulate the respiratory muscles, and even the heart itself.

"WILL IT PASS?"

An early morning in June, 1857, a gentleman called at my office in a great state of trepidation and, almost breathless, told me that his wife had awoke with a sensation of suffocation, and desiring to swallow something which was sticking in her throat. It being so far down that it was impossible for him to get hold of it, she had, by violent efforts, swallowed it. He said it was a plate with six false teeth upon it, and fastened to the back teeth by two clasps, and asked if it would pass. I inquired if it was a *gold* plate, and he replied that it was.

I, very much to his surprise and satisfaction, told him that undoubtedly it would pass. He returned to his wife, and watched for the appearance of the gold plate. In three days he came to my office and reported that the teeth had not only passed, but had been replaced and were now masticating as formerly. The wife suffered no pain or inconvenience while the teeth were passing through the bowels, and only very little pain when passing the anus. The gentleman called a few days since, and said the teeth were still doing good service, and did not lose any of their original value by "swinging around the circle."

A. B. Robinson.

Boston Highlands, Jan. 24.

TREATMENT OF CROUP.*

A number of the *Journal für Kinderkrankheiten* has a lecture by Dr. Fabius, of Amsterdam, on the treatment of croup, from which the following is extracted.

Dr. F. never employs antimony, calomel or bloodletting; for, as he says, "the chief

* This paper has been on hand for some time. This "croupy" weather brings it out.—Ed.

object in treating croup is to avoid debilitating remedies as far as possible." Ipecac is just as good an emetic as antimony; other purges are equally efficacious with calomel; bleedings are unnecessary. Of late years he has ceased to let blood in croup, and has been much more successful with his cases than formerly. An emetic, a warm poultice to the neck, and a large quantity of warm steam in the room, are his "abortive" measures. "In croup," he says, "this treatment brings relief; while in pseudo-croup it brings cure, or, as some say, it aborts croup."

If false membrane has actually formed, Dr. F. contends earnestly against the use of antiphlogistics. Antimony is abundantly proved to have been the frequent cause of sudden death in young children. Sulphate of copper is also rejected by Dr. F. He declines to speak of chlorate of potash, but ascribes more efficacy to carbonate of potash. Luzsinsky, of Vienna, by whom the latter was employed extensively, claims to have saved by its means 75 cases of pure croup. Vogel, of Munich, gives it the preference over all other medicines; and Dr. Fabius says that he has had 12 successful and 3 unsuccessful cases under the use of this remedy alone; besides 5 successful ones where tracheotomy was performed. In doses of from ʒss. to ʒij. daily, diluted with water, it is not debilitating or dangerous. It should be noted that the carbonate —not the bicarbonate—is what is intended.

The effect desired of emetics is purely mechanical, to clear the air-passages. They may be repeated two or three times a day, so long as the stomach answers readily to the stimulus, and must be left off as soon as the act of vomiting seems no longer to relieve the respiration. Emetics, poultices, steam and carbonate of potash, are his remedies until tracheotomy becomes needful. "We ought to operate when the disease is becoming worse, and the difficulty of breathing greater; when the anxiety begins to be permanent, and cannot be removed by emetics; when the scrobiculus cordis and the region above the clavicles are drawn in upon inspiration; when, finally, double pneumonia is not present, nor any other inevitably fatal condition, and when the strength is not too far gone." He advises care in avoiding bloodshed, rather than rapidity in operating; care, he says, "like that required in making an anatomical preparation." D. F. L.

Selected Papers.

REPLY TO PROF. BIGELOW BY PROF. GUNN.

Editor Chicago Medical Examiner:—Allow me to reply to Prof. Bigelow's letter in the last number of your journal, in which he trusts that I will "acquit him of intentional justice." I sincerely wish that the character of his letter was such as to make it easy for me to do so. He opens with the following sentence:—

"In a pamphlet which Prof. Gunn has rather widely distributed in this vicinity, and which has been brought to my notice since I recently returned from abroad," &c.

I trust that Prof. Bigelow did not think that I had omitted him in my distribution; for, I assure him, that I was more anxious to have him see my pamphlet, than any other one man; and I consequently mailed the first copy, sent out, to him.

As to the matter in controversy, it is a very simple question:—did I anticipate Prof. Bigelow several years in recognizing the influence of the capsular ligament, including the ilio-femoral ligament, upon the *dorsal* and *ischiatic* varieties of luxation? This is distinctly what I claim: in proof of which I quote from a short article which I published in the *Peninsular Journal*, in 1853. Speaking of dorsal dislocation, I used the following language:—

"During the dislodgement of the bone, the superior and posterior portion of the capsular ligament is ruptured, through which the head protrudes; while, from the position of the limb at the instant of protrusion, *the anterior and inferior portion* is very much relaxed, thus allowing the head to rise easily over the rim of acetabulum. As soon as the head settles into its position upon the dorsum of the ilium, the direction of the limb is changed, and the untorn portion of the ligament becomes more tense, and, for this reason, the head of the bone cannot be readily returned to its place, till the limb is again placed in a position to relax it."

In the same article, also, I used the following language:—

"This principle can be successfully applied to the reduction of the backward luxation of the femur into the ischiatic notch."

In 1856, I wrote as follows:—

"The upper and posterior half of the capsule was then cut away, leaving the *anterior and inferior half whole*, and the round ligament was divided. In this state, it will be seen that *all tissues* are entirely out of the way (and could neither afford protection against dislocation, nor impediment to reduction), except the *anterior and inferior half* of the capsular ligament."

I think my position, taken in the above

quotations, covers, so far as *dorsal* and *ischiatic* luxations are concerned, the entire ground assumed by Prof. Bigelow, in reference to the *same dislocations;* notwithstanding, he says, that I "show no knowledge of the existence of an ilio-femoral ligament." (Courteous, certainly!) The *constituent* character of the ilio-femoral ligament, in relation to the capsular ligament, is proven, not only by the anatomy of the parts, and by reference to all anatomical descriptions of the same, but also by Prof. Bigelow himself, who says:—

"The anterior part of the capsule of the hip-joint is a triangular ligament, of great strength."

I beg the reader to notice the force of the language "part of;" and I appeal to any surgeon, whether in speaking of the capsular ligament of the hip-joint, he has mentally excluded the ilio-femoral fibres.

Referring to my claim, Prof. Bigelow says:

"Prof. Gunn should remember, that although the greater may, in one sense, include the less, as a block of marble does a statue, yet there is no sentence or word in his whole pamphlet which alludes to the existence of an ilio-femoral ligament in the capsule."

Now, let us take, for an example, the dorsal luxation: does Prof. Bigelow claim that the capsule is completely torn asunder, with the exception of the ilio-femoral fibres? If so, why "circumduct," so as "to rupture in this way the whole of the rest of the capsule?" If *not* so, I would suggest that Prof. Bigelow's pet statuette is not yet chiselled, and that truth is better represented in the block as I left it.

I make no claim to Prof. Bigelow's ideas, in reference to other dislocations. As to them, we differ widely. How soon, or to what extent, I may hereafter adopt them, time, observation and thought will determine. But if, in the two specified, we are so far asunder in our views of the *lesion*, and its influence, why does Prof. Bigelow take pains to state that he "first met" my "pamphlet" several years after my (his) own theory was made public?" I would suggest that this *naïve* remark is probably significant of Prof. Bigelow's own consciousness.

In addition to the above, permit me to append the following—I hope impartial and *strictly* fair—paragraphs, which I had already prepared as a postscript to my little pamphlet:—

"The part played by the *anterior* and *inferior* portion of the capsule of the hip-joint, in its untorn condition, in *dorsal* and *ischiatic* luxations of the head of the femur, both in producing the characteristic phenomena of these lesions, and in opposing ordinarily directed efforts to reduce them, was worked out by process of thought *and experiment.* But the idea, that in downward and forward luxations, the *upward* and *backward* half of the capsule remained untorn, and that, in forward luxations, the *posterior* half was unlacerated, was reasoned out, both from analogy and the manner in which these accidents occur. But no experiment was instituted to prove the position taken. I was, therefore, unprepared, in issuing this edition, to either take issue, or coincide with Prof. Bigelow's assertion, that the ilio-femoral portion of the capsule remained intact, in all the four standard dislocations of the hip-joint.

"I have, however, since then, in preparing to illustrate my lectures on this subject, during the current session, resorted to the following experiments, to wit:—

"A fresh, middle-aged subject was selected, upon which I first produced the forward luxation. The characteristic signs were present. I dissected away the integument and superficial fascia. The fascia lata was found lacerated from its attachment to Poupart's ligament, and through the fissure was seen the shining surface of the femoral head; clearing away this fascia, the sartorius was found overlying the trochanter major; the psoas magnus and iliacus hugged closely the outer extremity of the neck. The head lay upon the origin of the pectineus, the outer edge of which was lacerated. Dividing and reflecting these muscles, the anterior surface of the neck and head of the femur are entirely exposed. The capsule *was completely torn from the whole anterior intertrochanteric line*, including the re-inforcing fibres of the ilio-femoral, and split to its acetabular attachment.

"Upon the other side, I effected a downward luxation upon the obturator foramen. An examination revealed extensive rupture of the capsule, upon the side adjacent to the foramen, and an *intact condition of the ilio-femoral* and of the capsule opposite to the rupture. Careful inspection of the mechanism of the untorn portion of the capsule, including the re-inforcing fibres of the ilio-femoral, revealed the fact, that the attachment of the upper end of the ilio-femoral being so far *above* the socket made its influence identical with that of the upper and untorn portion of the capsule proper. In *mechanical effect*, the ilio-femoral may be regarded, in this accident, as a constituent part of the *upper* portion of the ligament. Experiment, also, confirmed the correctness of my directions as to the method of reduction."

I would also remark, upon Prof. Bigelow's mode of reduction, that he seems to regard the ilio-femoral as the only thing of importance or use about the joint, and proceeds to "circumduct" and tear the rest of the capsule "with impunity." Perhaps the injuries already sustained by the joint may be generally added to "with impunity;" but would it not be better and more surgeon-like to avoid further laceration? I confess that I can see but little to choose, between the application of power, by means of the

pulley, or by means of the lever (which latter is essentially Prof. Bigelow's mode), only, that by the latter plan, greater speed and efficiency are attained, by a more advantageous application of the power used. Of the two, the latter is capable of the greater mischief, and both are too barbarous to be resorted to, in most cases of recent luxation. MOSES GUNN.

PUERPERAL FEVER TREATED BY INJECTION OF AMMONIA INTO THE VEINS. COMPLICATION OF PREGNANCY WITH OVARIAN DISEASE.

AT the Obstetrical Society of London, Dr. Tyler Smith read a paper on a case of puerperal fever treated by the injection of ammonia into the veins, followed by recovery. The patient, a primipara, was delivered by forceps on November 1. On the 5th symptoms of puerperal fever supervened, and on the 12th she was in such imminent danger that Dr. Smith determined to try the injection of ammonia into the veins, as practised by Dr. Halford in Australia for snakebite. The operation was performed at 7.45, P.M. A solution of one part of liq. ammoniæ to three parts of water was injected to the extent of half a drachm into one of the veins of the right forearm. As soon as two or three drops had been injected she roused, and complained of severe pain in the opposite arm. When the operation was completed there was very great pain over the whole body, with intense smarting of the right arm. This continued without abatement for several hours. The sickness ceased at 11, P.M., but the bowels were moved four times in the course of the night. Towards morning the pain subsided, and she got a little sleep. November 13.—The abdomen had much diminished in size, and the pulse had fallen to 100. 14th.—Expressed herself as feeling better, and was quite sensible, though pale and weak. Pulse 108. Right arm at seat of puncture red and swollen, and the veins of the arm were distinctly mapped out. Was able to take a little food without sickness. 15th.—Tongue getting natural; pulse 100; abdomen less in size. 17th.—Still progressing favorably; a small ulcer had formed on the right arm at the seat of puncture. A slight relapse occurred on the 20th, but after the 22d her improvement was uninterrupted. In commenting upon the case, Dr. Smith observed that he had never seen a patient in a similar condition recover, and, although he had as yet adopted this treatment in this case alone, so successful was the result that he had felt it incumbent upon him to bring the particulars before the Society. He would not at present offer an opinion as to whether the ammonia acted as an antidote or stimulant.

Dr. Aveling would have liked a fuller account of the history of the plan of injecting medicinal fluids into the veins, as it was a method of treatment of much antiquity.

Dr. Barnes said reference to the history of venous injections did not diminish the merit of applying this method to the treatment of puerperal fever. In this disease it was often difficult to get remedies absorbed; the only hope seemed to be in direct injection into the vascular system. He then adverted to the practice of saline injections in cholera, by which many lives had been saved. At the last meeting of the Society he had stated his opinion that the injection of saline fluids and transfusion ought to be, and would be, largely extended; and in his work on obstetric operations, now through the press, he had advised it in certain cases of puerperal convulsions, fever, and obstinate vomiting. He doubted whether the fluid used by Dr. Smith was the best. He should prefer a fluid like Dr. Little's, made of similar specific gravity to that of the blood, adding a little ammonia and alcohol. He thought the indication was to carry the ammonia in a considerable bulk of fluid, not concentrated.

Mr. Spencer Wells said he had been much struck by Dr. Halford's reports, and last March he had injected half a drachm of liq. ammoniæ into one of the veins of the arm of a woman two days after ovariotomy. The pulse and temperature had risen to 140 and 102·8°, with the usual signs of fibrinous deposit in the heart. Scarcely more than a momentary revival followed the injection, nor more after another by Dr. Junker two hours afterwards. A large fibrinous clot was found after death filling up the left ventricle. Mr. Wells suggested that if Dr. Smith's example is followed, great care should be taken only to inject ammonia where there is an excess of fibrine in the blood; to inject it in cases of any low form of fever or blood-poisoning, where the breath exhaled is charged with ammonia and the blood is already too fluid, would be excessively dangerous.

The President observed that the Society was much indebted to Dr. Tyler Smith for

bringing this interesting case forward. One swallow did not make a summer, but new facts were always deserving of attention.

Mr. T. Spencer Wells read a paper on the Complication of Pregnancy with Ovarian Disease. The author related fifteen cases of pregnancy complicated with ovarian disease which had fallen under his own observation, restricting his remarks to questions of treatment. In three cases sudden death followed spontaneous rupture of the cyst in or before the seventh month of pregnancy. In two cases pregnancy and ovarian disease went on together without interference, and lingering labors ended in the birth of stillborn children. In one case twins were born alive; but the mother had suffered greatly from distention. In one case five and in another six pregnancies had gone on, and ended normally without interference, but in the last case the cyst ruptured spontaneously in the seventh pregnancy. Five patients were tapped during pregnancy—one twice, one three times, and three once. In all five living children were born after natural labors. In one of them ovariotomy was successfully performed four months after delivery. In one case ovariotomy was performed in the fifth month of pregnancy; the uterus was emptied at the same time, and the patient recovered. In the concluding case of the series ovariotomy was performed successfully in the fourth month of pregnancy, after spontaneous rupture of the cyst and peritonitis, pregnancy proceeding without interruption. The author believed that a careful consideration of these cases would lead to the following conclusions:—1. Pregnancy and ovarian disease might go on together, and end safely both to mother and child. 2. But in a large proportion of cases, probably in nearly all where the ovarian tumor was large, there was danger of abortion, or, if the pregnancy proceeded to the full term, of lingering labor and a still-born child; and throughout the later months of pregnancy there was danger of sudden death to the mother from rupture of the cyst or rotation of its pedicle. 3. Spontaneous premature labor might not save the mother from these perils; and the induction of premature labor almost implied sacrifice of the child, with considerable risk to the mother. 4. There was no proof that tapping an ovarian cyst was more dangerous during pregnancy than at any other time. It would generally afford immediate relief to distention, and lead to the normal termination of pregnancy in the birth of a living child at a very slight risk to the mother, if proper precautions were taken to prevent the escape of ovarian fluid into the peritoneal cavity, and the entrance of air into this cavity and into the cavity of the cyst. 5. If an ovarian cyst should burst during pregnancy, removal of the cyst and complete cleansing of the peritoneal cavity might save the life of the mother, and pregnancy might go on to the full term. 6. Of three cases on record, where a pregnant uterus had been punctured during ovariotomy, the only recovery was in the one case where the uterus was emptied before the completion of the operation.

Dr. J. Braxton Hicks then read a short account of six cases, comprising eight pregnancies where pregnancy was associated with ovarian cystic disease. In none had any symptoms of danger arisen, and all were delivered of live children at full term. Dr. Hicks also mentioned that he had never seen any other case with this complication attended with untoward symptoms. He thought a collection of a larger number of cases necessary, before the necessity for the induction of premature labor could be established as a rule.

Dr. Bathurst Woodman referred to the bursting of thin-walled cysts as not uncommon where there was no complication with pregnancy, and considered that the relative frequency of a favorable or unfavorable result in such cases was an important element in the discussion of the present subject.

Dr. Playfair referred to the complication of labor with ovarian tumor, of which he had collected the details of fifty-seven cases. Of these fifty-seven thirteen had proved fatal; and this mortality was probably due to the contusion to which the tumor was subjected during the pains. Every case in which the cyst had been punctured (seven in number) had done well.

Dr. Wiltshire asked Mr. Spencer Wells if he would kindly tell the Society how he would treat cases of solid or semi-solid ovarian tumor complicating pregnancy. Tapping, though useful enough in unilocular cysts, would in such cases be nearly useless.

Mr. Bateman, after referring to the case in which he was engaged with Mr. Wells, gave some particulars of a case of ovarian tumor obstructing labor, and necessitating craniotomy, which had occurred in his practice many years ago. About three weeks after her confinement the patient succumbed to an attack of erysipelas.

Dr. Barnes, in reply to Dr. Wiltshire, said the practical rule was, when the tumor obstructed labor, act upon the tumor so as to free the passage for the child; when this

could not be done, then act upon the child.

Mr. Spencer Wells said, in reply, that he could not see why an ovarian cyst should not be tapped during labor. In the case of a multilocular cyst, probably one of the largest cysts might be emptied by tapping. If not, and the whole tumor was more or less solid, the case would then be one for careful consideration, and the question of instrumental delivery, the Cæsarean section, or ovariotomy would have to be determined by the circumstances of the case.—*Medical Times and Gazette.*

Reports of Medical Societies.

MEDICAL TESTIMONY AND EXPERTS.

A REPORT TO THE SUFFOLK DISTRICT MEDICAL SOCIETY.

The Committee of the Suffolk District Medical Society, appointed last winter, with instructions to consider and report on the subject of

Medical Testimony and Experts,

herewith present their final report upon the questions, as originally submitted to them, and as recently recommitted to them for a more detailed examination.

The Committee are fully aware of the importance of the questions, and at the same time are conscious of the many and great difficulties that surround the proper consideration of them. These difficulties have of late years exercised the thoughts of some of the best minds in the medical and legal professions. They have been discussed by individuals and by social science associations in Europe and America. It is very evident that some change must eventually be made in the present mode of investigating civil and criminal cases involving questions that require scientific or skilled witnesses to testify upon matters of science or art, and of which the court and jury may know little or nothing previous to the trial. The rapid advances made by science and art require that experts in these departments should be summoned in order to aid those who are finally to decide the cause. As at present conducted, this custom of summoning experts may actually lead to error rather than truth. This is especially liable to occur in civil actions, as we shall endeavor to show in a subsequent part of our report.

Under a vote of this Society, your Committee was directed to ask the American Academy to appoint a similar committee, with the idea of a joint appeal to the Legislature for the enactment of a law upon the subject. The Academy appointed the Hon. Emory Washburn, Hon. Joel Parker of the Dane Law School, Prof. Horsford, E. B. Bigelow, Esq., and Dr. H. R. Storer.

After a long and ample discussion of the whole matter by this joint committee, and amid grave doubts whether *any law* would meet all the contingencies, it was unanimously voted that Hon. Emory Washburn should draw up a bill and present it to the Judiciary Committee of the last Legislature, and urge its passage. This was done, and a draft of the proposed bill is herewith appended. Judge Washburn appeared before the Committee and urged its adoption. It, however, never came to light afterwards. We know of no reasons for this, nor is it necessary for us to seek for any. But it is for the Society to decide whether it will again urge the passage of the law proposed by the Committee, or of some other of a similar character, or allow the whole to go by default. Your Committee would suggest that a copy of the law be entered in full upon our records for future reference.

The Committee ask permission to lay before the Society some of the arguments and facts, *pro* and *con*, in reference to the whole subject of experts in courts of law.

Let us suppose that in a civil case a question is to be brought before a court about which neither the judge, counsel nor the jury can know but little. Moreover, it is so intimately associated with some peculiarity of science, or of art, or of fact, that it would be impossible for either of these parties to learn much, if they can learn anything, upon the subject during the short period of the trial of any cause. Still further, there are causes for the proper elucidation of which a long series of scientific study or of experiment is needed. To meet such a case the following course is usually pursued. Either party in the cause has the right to employ any one he may choose as expert. If the case involves large interests, the wiser and wealthier party generally engages a sharp-witted man of science, and tells him what it is desirable for science to prove in order that he may gain his point. Under such circumstances, however learned or honest the expert may be, his mind will be inevitably inclined to bring all his energies to bear upon the idea of success for his employer rather than to learn the exact truth in regard to the entire subject.

By study and experiment he may thus be enabled to bring a great amount of learned evidence, and apparently quite overwhelming in behalf of his patron. But if the opponent in the cause has been equally wealthy and wise in the world's ways, and has also engaged for his side of the question some scientific rival, there may be an equally scientific display on the other side. Between these two witnesses the minds of the jury are clouded rather than enlightened. They have not been trained to such studies. They do not see the fallacies that perhaps lie under both displays, and they at times seem to forget that self-interest has perhaps marred the testimony of both witnesses. The discrepancy between the two may be easily seen, but no light comes from them. The result sometimes is, that the jury ignore altogether the scientific evidence, and decide according to what some persons call the dictates of *common sense;* while others, adepts in the science involved in the question, style it the *veriest nonsense.* All the while that this battle of the giants is going on, no one hints aloud that the strong element of self-interest is perhaps underlying science and really warping both witnesses. Both should therefore be treated as common witnesses, and be closely cross-examined. To have this performed effectually it should be done by their peers, viz., by experts trained in the same science or art, but speaking through the mouth of the judge or either of the advocates. Hence it would be most appropriate that the judge should have the right to summon men skilled in this special training, either thus to question others, or to give their own opinions upon the matter in dispute. Such men would come untainted with the breath of suspicion of favoritism, or of self-interest, leading them to favor one side or the other of the question in dispute. If this be true, should not the Legislature, *pro bono publico*, assume the right to require of any person learned in any branch of knowledge to give his opinion, either in open court or upon written testimony, and thus enable the judge and jury to act understandingly in the premises? This is what the law, suggested to the last Legislature by the Joint Committee of this Society and of the Academy, proposed to give to the judge.

The preceding remarks on the clashing of the testimony of experts in any civil case may not apply exactly to the processes usually pursued in a criminal cause. In this latter case the expert called by the State is supposed to be, and really ought to be, above the suspicion of favoritism; for the theory of such a trial is, on the part of the State at least, to get exact truth and to administer exact justice. Hence, when a learned man is called upon by the State Attorney to investigate the facts, he has no reason for wishing to arrive at one conclusion rather than another. But even in criminal cases very discordant opinions are sometimes advanced. The immediate cause of the raising of the present committee was the remarks made by the presiding judge in a criminal trial. It is undoubtedly true that under the present initial processes of the law, matters for examination may be placed in the hands of an ignorant or unreliable so-called expert by some distant country magistrate, policeman, or coroner, entirely unfitted to make such selection, before the affair in question comes to the knowledge even of the Attorney-general or any competent law officer. This necessarily brings into the case at trial a person who should have no connection with it, or may even prevent its investigation by other and proper skilled and reliable persons. In other countries, only those authorized officially by the courts or high authorities can be employed in the investigation of criminal cases.

Among the objections to giving this power to any judge may be cited the following:—

It is contrary to the usual custom in our community to compel a man to testify to the *opinion* he may hold on any subject. That opinion is considered as something sacred, and which the State has no right to demand of any one. It is his property, and as such no one, not even the State, has a right to take it from him. But is this assertion really tenable, when considered in the light of the rights usually claimed by the State? The sovereign has always asserted, and has now gained the right to demand of a man, the free confession of all of his knowledge about certain facts bearing upon matters important to the public welfare, and about which the witness is supposed to know what others do not. The State can take the property of any one for the public good. During the late rebellion even life itself was often taken for the safety of the Republic. Your Committee cannot see how any rights are invaded more in the case of a learned man, who is required to give his opinion merely in a certain cause, than in another case where life itself is taken without scruple. It is true that the necessities of the attending circumstances may be undoubtedly greater

in one case than in the other. Nevertheless, human life may be at stake in both cases, and if the argument hold good for one it ought to hold for others where perhaps human interests alone are at stake, inasmuch as they become at times quite as important as life itself.

The payment of such scientific or learned experts, when summoned by the judge to give their opinions and render essential service to the State in its courts of justice, should be proportioned to their high skill, and to the time and trouble involved, and subject to the approval of the Court that should summon them.

If such an aid should be granted to the Court in any case where hired opposing athletes in science present their opposite opinions and reasoning, or in criminal cases, where such high advice is needed, it is evident that such are and will be still more necessary in those grave cases where no expert has been called, or in those in which individuals claiming to be experts, but without a single qualification justifying their assumption of that title, may give evidence and may state opinions wholly erroneous, whereby the property and possibly life of a citizen may be endangered. In one or all of these contingencies it would seem most important for the sake of justice that the Court should have the power to summon any one it may choose to aid in the determination of a case.

Your Committee, therefore, cannot but regret that no provision has been made by the Legislature for this purpose.

The Committee deem this a fitting occasion for them to bring before the members of the Profession certain facts connected with the present mode of conducting trials, and at the same time they will take the liberty of suggesting some evident rules of conduct, which, as it seems to your Committee, might well be followed by any professional man when called upon the stand.

A medical witness would do well to remember, 1st, that no one has a *right*, as the law now stands, to ask an *opinion* of him. 2d, that, if asked for an opinion, he may refuse to give it; and 3d, that in order to throw doubt on his testimony the opposing counsel will, at times, endeavor to entrap him into the expression of an opinion, and afterwards, by subsequent questions, to lead him to absurd conclusions, whereby his testimony, although strictly accurate, may be made to appear wrong in the eyes of the jury.

4th. In the statement of facts your Committee believe that it would be well to be as brief as is consistent with clearness. Moreover, the witness should, as far as possible, avoid all technical language. For example, a witness when about to instruct a jury will lose credit for clearness of statement, and may darken the minds of the whole court, by telling of the *scapula* instead of the shoulder-blade, or using *clavicle* for collar-bone, *sternum* for breast-bone, &c.

5th. If he be not sure that he is really an expert in the matter in hand, he should beware of going upon the stand at all. If he do so, he deserves and probably will get a severe castigation from opposite counsel, and he has no right to ask sympathy from his professional associates. He cannot blame lawyers for even apparent rudeness in their attempts to prove him before the jury to be the ignoramus he really is.

6th. A medical man should beware of allowing himself to be called into court save as an independent witness, to give evidence upon "the truth, the whole truth, and nothing but the truth." Your Committee know of no act of villainy greater than that which a scientific man commits when he voluntarily takes the witness-stand, and then fails to act upon this noble rule. Yet this has been done in Massachusetts, and may be done hereafter. If on cross-examination the perjured scientist have sufficient coolness and the opposing lawyer little wit, he may escape detection, as he has escaped before. Under the present law the Court cannot summon any one of his peers to catch him in his wordy windings, and he may thus escape the righteous indignation that would arise were his fraud discovered by the community he thus outrages. Such men actually at times may pervert justice. As pertinent to these remarks the Committee would cite the following remarks made by the present Lord Chancellor of England, in reply to questions put to him by the Committee on State Medicine of the General Medical Council of England.*

"Every witness should eschew altogether the notion of partizanship. He should be ready frankly and unreservedly to give his opinion, regardless of how it may tell. He is there not as an advocate, but in order to inform the court and jury according to his best judgment."

This is undoubtedly true doctrine. Your Committee believes that a really truthful expert will be fully alive to the honorable and important position that he will hold. He will come prepared not merely to tell the whole truth, but to see that none of it

* Med. Times and Gazette, Nov. 13, 1869.

is hidden through his evidence. He will be careful to prevent if possible any question being put to him which by answering categorically may hide a part of the truth, and if he perceives that counsel have that aim in view he will answer with sufficient detail to reveal the truth in its wholeness. He will endeavor that no false interpretation shall be put by counsel on the facts presented by himself or others. And if opportunity be afforded him he will explain all facts in such a way as to make the truth appear in the fullest light.

7th. The conceit and desire for self-glorification of some experts produce evil results. They deliver themselves more like professors from their chairs of instruction, and sometimes talk with less precision than is required in a court of law. Such exhibitions are apt to afford ample opportunity for subsequent criticism on the part of counsel.

8th. Some while on the stand seem to forget the great difference there is between the statement of a fact or of a series of facts, and the inferences that may be made from these facts. The facts should be given, the inferences may be left to the wisdom of the court or jury to make. If the witness makes them he does so at the risk of severe criticism.

8th. Some really scientific men are so prejudiced that the simple fact that another with whom they may have had some previous antagonism has expressed an opinion, will induce in their minds a tendency to a belief precisely the reverse of that given by the opponent. Nothing can more effectually prevent one from arriving at exact truth than this mental quality, if brought to the witness stand.

There is one other topic on which your Committee feel called to make some remarks—viz., the relations of the lawyer to the expert. While human nature exists as at present, it may be feared that we shall never arrive at perfectly satisfactory results, even if we get these wisest of men for experts. However wise and truthful the witness may be, he cannot be sure while on the stand of not meeting *unwise* or *unprincipled* lawyers. One of the sovereign ideas of the law is that there are always two sides to every question, and another is that it is the bounden duty of each advocate to present his side of the question in the best light, and if possible in a better light than that of his antagonist. If, therefore, in conducting an important trial, it appear obvious to an able but *unprincipled* lawyer that he can gain any advantage by browbeating a witness, he will be very likely to try that method. If by any trickery of words he can make his opponent's witness stumble, he will be likely to try to make him do so even at the expense of truth. Nay, more; we fear that it must be admitted that some lawyers who rank high as gentlemen and men of honor in the community, and who, in their dealings with men in common society, would not dare to use words of *insult* to others when off the stand for fear of personal violence from those thus attacked, will within the sacred precincts of a court of justice indulge at times in remarks worthy of Billingsgate. By *insult* and sharp and repeated questioning, or by inuendo they will endeavor so to confuse or irritate a witness that perhaps some unlucky admission will be made by him. This is all that is wanted, and the expert will be made to appear ridiculous, and his testimony may thus become of little or of no avail in the minds of the jury. On such an occasion, therefore, it is of paramount importance for the witness never to lose his self-possession, and if he can give the retort courteous to the advocate it will be fortunate. And above all else he must be sure of not going in his evidence beyond the bounds of strict truth. Preserving that as his basis whereon to stand, he may defy all such attempts to upset his testimony. If he find himself pressed by repeated and what he perhaps may think *absurd* questions, for the obvious purpose of confusing and degrading him, he may appeal to the Court, or decline further speech, ever remembering that it is better for truth's sake for him to avow ignorance enough to be unable to reply to unwise questions, and decision of character and self respect sufficient to enable him to refuse to answer one that is put for the purpose of confusing him. Such a witness will command the respect and close attention of all the court. The ungentlemanly lawyer will not dare to attack him for fear of equally sharp replies to any questions offered. The honorable advocate will not wish to attack him. The judge will greet him as a co-worker and as a most efficient aid to himself in the careful and thorough unravelling of all the intricacies of the case in hand, and upon the proper and just investigation of which, perhaps, depend all the solemn destinies of life or death of a human being.

To establish a system whereby such an expert could be summoned by a court to aid it in its high duties is an object devoutly to be wished for by every one. Whether we shall

ever get a law establishing such a system remains yet in doubt. Wiser men in the eyes of the community than the Joint Committee of the two Societies, viz., the Judiciary Committee of the last Legislature, have apparently decided that nothing can be done towards obtaining it. Your Committee do not believe that all wisdom is centred in the Legislatures of the past. They hope much from the future. Whenever a great evil exists, then and there close beside it, though invisible for a time, lies undoubtedly its antidote. We must look for it, however, or it will not be found.

Meanwhile, we have only to discuss all questions having relations thereto in the full conviction that under the light of human reason we shall eventually obtain all all and more than we now ask for.

With these remarks the Committee ask to be discharged from further consideration of the subject.

HENRY I. BOWDITCH,
HENRY W. WILLIAMS,
F. MINOT,
GEORGE DERBY,
R. M. HODGES,
JAMES C. WHITE,
Com. of the Suffolk Dist. Med. Society.

Draft of a Law prepared by Judge Washburn in behalf of the Joint Committee from the Suffolk District Medical Society and the American Academy of Arts and Sciences, and presented to the Judiciary Committee of the Legislature of Massachusetts at session 1868–69.

"When a cause is at issue in any court, in which issue is involved any question of art, or skill, or science, which may in the judgment of the court render it necessary or desirable to examine experts as witnesses in the trial thereof, the court may in their discretion appoint and require the attendance of one or more persons to be examined as such experts, and may allow to such person or persons such sum or sums for fees as witnesses as to said court may seem reasonable and proper, to be charged and allowed as costs to the prevailing party, if he shall have paid the same, unless the court for good cause shall otherwise determine. And the court may in their discretion require of the parties, or either of them, to advance and pay to the person or persons thus appointed all or any part of the sum or sums so allowed before the trial of any such issue be begun or proceeded with."

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

AN APPEAL TO CONGRESS.

THE Medical Society of the District of Columbia, at their meeting held January 12th, 1870, appointed Drs. Lovejoy, Toner and Lieberman a committee to draft a statement of facts explaining the status of the Medical Society of the District of Columbia, with reference to the proposed action of Congress for the repeal of its charter. That committee made the following report, which was adopted and ordered to be published:—

AN APPEAL.

The Medical Society of the District of Columbia, which has existed in this community for more than half a century, having been lately assailed, and a resolution, founded upon statements evidently derived from sources at once malicious and false, having been introduced into the Senate of the United States to repeal its charter, in the following terms:—"*Resolved*, That the Committee on the District of Columbia be directed to consider the expediency of repealing the charter of the Medical Society of the District of Columbia, and of such other legislation as may be necessary in order to secure for medical practitioners in the District of Columbia equal rights and opportunities without distinction of color;" this society deems it respectful and due to its own dignity to give a public explanation of its actions in order that it may be exonerated, in the opinion of all just men, from the charges which have been brought against it by designing and interested enemies.

It has been charged that this society has, with prejudice and a tyrannical exercise of the powers conferred on it by its charter, refused to certain individuals chartered rights which they could equitably demand.

The falsity of this charge will be apparent upon an examination of the provisions of the charter.

1. The charter requires that the society shall elect a board of examiners "whose duty it shall be to grant licenses to such medical and chirurgical gentlemen as they may, upon a full examination, judge qualified to practise the medical and chirurgical arts, or as may produce a diploma from some respectable medical college or society."

2. It imposes a penalty upon any one venturing to practise without such a license.

3. It forbids the society "in anywise to

regulate the practice of medical or chirurgical attendance on such persons as may need those services, or to establish or fix a tariff of charges for medical attendance or advice, or to interfere, in any way, with charges or fees for medical attendance or advice."

4. The privilege is given by the same instrument to the society that its members "MAY elect into their body such medical and chirurgical practitioners, within the District of Columbia, *as they may deem qualified to become members* of the society.

With respect to the first of these—that is, license after examination—nearly every respectable practitioner of medicine who has settled in this District desirous of fulfilling the requirements of the law, has applied for and received the license from the board of examiners, and in no case has this license been refused to a person passing the required examination. Even the colored physicians who now complain have received their license immediately after examination and payment of the fee invariably paid by all applicants for license. The board has granted the license in every instance, without any distinction or restriction when the proper qualifications have been ascertained to exist.

2. The Society has on very rare occasions deemed it expedient to have the legal penalty inflicted upon persons for practising without the aforesaid license, and then only for the protection of the public against notorious and swindling quacks.

3. The Society has never, in a single instance, by forbidding consultations or restricting them in any way, infringed that provision of the charter forbidding interference with "the regulation of the practice of medical attendance." But, debarred from the exercise of these powers in the Society, the medical practitioners of this District many years ago organized a voluntary society, known as the Medical Association of the District of Columbia, and in that association have made regulations with respect to medical ethics, including the regulation of consultations, fees, &c. The regulations of this voluntary association have been confounded with the acts of the Society, and the latter body is thus made to bear the credit or the odium of regulations not properly chargeable to it. The existence of this second body, the Medical Association, is not fully known by the public or some of the profession as it should be, and in the charges made against the Society in Congress there was a marked evidence of this confusion.

4. By reference to the fourth provision of the charter, as stated above, it will be seen that membership is not a right compulsory on the society to grant when applied for, and that the society has, in fact, in the exercise of its legitimate right on more than one occasion, rejected candidates for membership; and it has thus refused those individuals, not as a right which they could demand, but a benefit which it was optional with the society to bestow.

Every man, be he Chinaman, Choctaw or African, whether he may think proper to practise hydropathy, sorcery, homœopathy, clairvoyance, or any other form of quackery, has a right under the law to demand of the board of examiners a license or certificate on presenting a diploma from a respectable medical college or passing the required examination. It would therefore be absurd to insist that every licentiate should necessarily be entitled to the privileges of membership, which, briefly stated, consist of social reunion for medical discussion, and the election of officers annually.

The medical society for a series of years has held weekly meetings for the discussion of medical subjects, and these meetings have been of the nature of social reunions, and of course each member has exercised his right in the selection of his associates. To question his right to vote in the election of members as he may deem proper would be an unwarrantable infringement of his franchise.

Shall the existence of the society be threatened because a majority of its members have held and acted upon the belief that the admission of certain persons as members would render the attendance upon these meetings so distasteful as to insure their cessation, and thus, far from benefiting the complainants, destroy the usefulness of the society?

In fine, the license from the board of examiners conveys all the *rights* which this society can confer. The privilege of membership is merely a privilege of association and social reunion, and it is for entrance into this social reunion that the friends of the colored physician are clamorous, and not only threaten to destroy the society unless admitted, but have boldly demanded, in public meeting, that the charter be taken away from the society; and among the prime movers in this attempt to effect the destruction of the society are certain individuals who have settled amongst us of late, and received the courtesy of its members; yet, while retaining their membership, they are plotting its destruction.

It will thus be seen that the charter secures to all medical practitioners, without distinction, rights dependent only upon certain moral and intellectual qualifications, and that the society has never desired nor attempted to interfere with or deny those rights. It will also be seen that it leaves the question of membership as one of optional and social association.

This society does therefore most solemnly, in the presence of the public, protest against a tyrannical attempt to punish it for the exercise of an undoubted and legitimate right, and in the absence of any express legislation to meet the emergency, the opposition to which might then be justly chargeable to the society as a misdemeanor.

Signed by W. P. Johnston, M.D., *President;* Wm. Lee, M.D., *Secretary;* J. W. H. Lovejoy, M.D., C. H. Liebermann, M.D., J. M. Toner, M.D., *Committee.*

NATIONAL MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Memorial of the National Medical Society of the District of Columbia to the Senate and House of Representatives of the United States.

Whereas it has been stated in a published circular that the persons endeavoring to form a medical society on the basis of "equality before the law" have maliciously and falsely attacked the Medical Society of the District of Columbia, we deem it but just to the public, as well as ourselves, to make the following statement of facts:—

Within the past few years some colored physicians, regular graduates of medical colleges, and of untarnished character and reputation, having held positions as surgeons in the Union army during the rebellion, have settled in this city and secured to themselves a large professional practice.

There being only one medical society in the District where all licenses to practise must be obtained, and all advantages flowing from medical and professional discussions were to be enjoyed, it became the duty of these colored physicians to obtain license and membership, in order to keep up their medical education, and derive all the advantages from weekly professional discussions.

The Medical Society of the District of Columbia has, on two different occasions, refused to elect these colored physicians to membership, acknowledging that the color of the candidates was the reason for so doing, and some of its members have refused to consult with them because they were not members of the Society.

This was in June, 1869. Hoping that discussion of the subject would aid in securing justice, we were content to await the result.

January 3, 1870, by a vote of 26 to 10, the Society refused to consider a resolution offered by Dr. Reyburn, which read as follows, viz:—

"*Resolved*, That no physician (who is otherwise eligible) should be excluded from membership in this Society on account of his race or color."

Some of the present officers of the Society have refused to consult with the colored physicians, but instead thereof, have taken charge of patients who were under their care, without giving them the customary notice of their dismissal, in direct violation of the ethics of the profession.

These colored physicians have applied to the Society for membership, but were rejected, by a large majority, although the Board of Examiners reported favorably on them. At the last election of officers in the Society, held January 3, 1870, the chairman of this board was removed, and a gentleman, late of the Confederate army, well known for his opposition to the admission of colored physicians, was elected in his place, thus insuring their future defeat. Other gentlemen who served during the war in the Confederate army are now prominent in the control of its affairs.

At the same meeting, a white candidate, a gentleman of high professional standing, and occupying an important official position, was objected to, solely on the ground that he was believed to be in favor of the admission of colored members.

Again, the circular published by the committee of the Society, states that their weekly meetings are "social reunions." These meetings are conducted under strictly parliamentary rules, from the opening to the adjournment, and only professional questions, essays, and papers, are brought forward for discussion, *and gentlemen are even required to obtain permission of the President to retire from the meeting.* If these meetings, held in compliance with the charter of the Society, are only social reunions, then the meetings of all bodies not strictly parliamentary are social reunions.

Other colored men will soon graduate from medical colleges in the United States and throughout the world, and their rights should be protected and guaranteed within this District.

It is a fact worthy of note that this is the

only country and the only profession in which such a distinction is now made. Science knows no race, color, or condition, and we protest against the Medical Society of the District of Columbia maintaining such a relic of barbarism.

We, for the reasons stated, and in accordance with the spirit of the times, ask Congress to grant a charter to a new Society which will give all rights, privileges and immunities to all physicians, making only the presentation of a diploma from some college recognized by the American Medical Association, and good standing in the profession, the qualifications necessary for membership.

Signed by Robert Reyburn, M.D., *President;* C. Adams Gray, M.D., *Secretary;* and Drs. J. G. Stephenson, A. T. Augusta, D. W. Bliss, S. L. Loomis, —— Purvis, R. J. Southworth, J. T. Johnson, J. E. Mason, *Committee.*

Medical and Surgical Journal.

Boston: Thursday, February 17, 1870.

RESPIRATION OF THE TISSUES.

Respiration of Turtles.—A leading article of the *Gazette Hebdomadaire* gives an account of some recent researches of M. P. Bert upon the subject indicated above. We translate portions of it.

Our classical treatises are almost entirely silent on the question of the respiration of the tissues, which was started in the last century by Spallanzani. The celebrated physiologist of Pavia sought to elucidate, though in a rudimentary manner, the mode of interchange of gases in the system. He contented himself with reciting without commentary the experiments which he had made, and which it would hardly be worth while to recount, in view of recent results much more complete. Matteuci, Liebig, Valentin, Hermann (the last quite recently), have made researches in the same direction, confining themselves, however, to a single tissue—the muscular.

Hermann recognizes in what he has denominated muscular respiration nothing more than a phenomenon of cadaveric decomposition—a theory which is impaired by the direct experiments of M. Bert. According to the latter experimenter, the work of oxygenation in a muscle completely detached from the body represents a function which is not passive; for it is incontestable that the detached muscle retains its vital autonomy for a certain length of time, and that fact is superabundantly demonstrated by the variability which occurs in muscular ingrafting. Carrying the investigation further, M. Bert applies his experiments to all living tissues. The results he has reached with vegetable matter will not detain us. Suffice it to say that they are somewhat opposed to the opinion of Saussure upon the distribution of oxygen in the different parts of the plant.

As to animals, the direct experiments of M. Bert demonstrate not only that the anatomical elements assimilate oxygen in different quantities, according to the functions incumbent upon them; according to their degree of vitality, and according to their intimate composition; but also determine, quite approximately at least, the proportionate degree of respiration in the different tissues of the same animal. This proportion varies very little between one animal and another of the same species. The animals used in these experiments are always killed by hæmorrhage. Fragments of tissue of about one cubic centimetre are separated from the body and arranged in several successive "stories" on copper gridirons, in guaged receivers inverted over mercury. This arrangement, by the multiplication of surfaces effected, favors the intensity of the phenomena of exchange. Strict care is taken that the weight of the substances used, their temperature, and the length of their sojourn, be identical.

In the first experiment thus made with the tissues of a mongrel between a jackal and a dog, it was found that after twenty-four hours the absorption of oxygen was very different according to the tissues, and that each of them had exhaled a quantity of carbonic acid different from that given out by the rest. The degree of these differences is subject to great variations, but the intensity of the phenomena in question affects a certain hierarchy, which has, with the exception of a few slight oscillations, been found always the same. This order pre-

sents itself as follows:—muscle, brain, kidneys, spleen, testicles, bones broken up and containing their marrow. The following experiments on dogs give in all respects analogous results. He does not present a table of figures; but contents himself with saying that 100 grammes of muscle absorbed as a maximum about 50 cubic centimetres of oxygen in twenty-four hours, with an oscillation in the temperature of the surrounding air of 10 degrees; and exhaled a corresponding quantity of carbonic acid; whilst under the same conditions the bones, which are at the foot of the scale, gave about 17 for oxygen and 8 for carbonic acid. The heart behaved pretty much like the muscles.

It is interesting to note that the hierarchy relating to the exhalation of carbonic acid does not correspond to that of the absorption of oxygen as concerns at least the same tissue. The fact demonstrated by Spallanzani that the quantity of oxygen absorbed increases in direct proportion to the richness in oxygen of the surrounding medium, was verified by M. Bert. It is worth while, on account of the practical bearing of this experiment, to give a few figures. Muscles from a dog (20 grammes) in equal quantities of gas (160 cubic centimetres) absorbed during twenty-four hours, at a temperature of 13 degrees [centigrade] when the gas was common air, 10·3 cubic centimetres of oxygen; and in pure oxygen 41·4 cubic centimetres. The exhalation of carbonic acid in this same experiment was in inverse proportion. In the air it was measured by 12·4 cubic centimetres, and in oxygen 9·9 cubic centimetres.

The muscles of cold-blooded animals (at a temperature of 10 to 15 degrees) absorb less oxygen than warm-blooded.

When an animal is allowed to die in pure oxygen it leaves unusued a large proportion of oxygen—70 to 80 parts in a hundred; while carbonic acid is produced to the amount of 20 to 30 parts in a hundred. The non-toxic property of carbonic acid being well known, it is presumable that the carbonic acid of the atmosphere opposes the emergence of the carbonic acid of the blood and of the tissues: thence, arrest of absorption of oxygen, in spite of its presence in considerable quantity in the surrounding medium. The experiments of M. Bert have confirmed and completed these assumptions.

A physiological fact of comparative physiology is added. On anatomical considerations, as the reporter tells us, it has been supposed by everybody that the tortoise, like the frog, swallows the air it consumes; that is to say, by closing the nostrils during the contraction of the pharynx. Shut up in an unyielding box, adherent to the superior wall of this cage, pressing closely into the intercostal furrows, and composed of sacs which open directly into the bronchi, how could the lung of a tortoise dilate and contract like the lungs of the mammalia?

Now here is a case for the application of the famous adage, *E pur si muove.* For the tortoise, in spite of what writers have said, respires air and does not swallow it. Twenty years ago Panizza demonstrated this fact. M. Bert has studied the mechanism of this respiration, and has obtained very clear evidence that tortoises have a perfectly defined respiratory rhythm. The respiration is effected by a veritable dilatation of the thorax. The inspiratory muscle is situated in the rear, between the carapace and the sternum. The rhythm of the tortoise's respiration is quite singular. It is composed of a half expiration, of an entire inspiration, and then of another half expiration; these following each other without interval. There is now a period of repose usually quite long. In energetic and rapid inspirations and expirations, the limbs intervene in the mechanism of thoracic movement, but not in the ordinary action of the lungs.

New Form of Crayons of Sulphate of Copper. *Mr. Editor,*—Every ophthalmic surgeon, and every general practitioner called upon to treat acute and chronic cases of catarrhal and granular conjunctivitis, has experienced the great difficulty of obtaining suitable crystals of sulphate of copper to be shaped into crayons for application to the eyelids. It is necessary that these crayons should be cut from the denser

parts of the crystal, free from soft portions and from water of crystallization, otherwise the surface soon becomes so rough as to scratch the conjunctiva, and so porous that it retains some of the morbid secretions, so that it becomes impossible to wipe the surface clean, and to use the crayon, without danger of conveying contagious products, for a succession of patients.

Good crystals may sometimes be had at the laboratories; but when packed for sale they are so broken, in being pounded into barrels, that it is only now and then that pieces can be found fit to be cut into the shape of crayons, or of a convenient size and form to be used as whole crystals. It would seem that it would be easy to recrystallize the sulphate, but there appears to be some practical difficulty in obtaining large and dense crystals, except where the manufacture is carried on upon a large scale. At the City Hospital it has been necessary to make diligent search among large quantities of fragments of sulphate of copper to find a supply of crystals for use in the Ophthalmic Department.

By combining with the sulphate of copper a small amount of alum, Mr. D. Kennedy has succeeded in casting crayons in moulds, which, though not quite equal to the best crayons laboriously formed from crystals, yet combine in a sufficient degree the essential qualities of hardness and a non-porous surface, and which are not affected by atmospheric exposure. They wear so nearly smooth that if carefully wiped they may be continuously used without danger from contagion, and they last a long time. We thus have a safe and convenient substitute for the nitrate of silver (often, perhaps, resorted to because other means are not at hand), which will be highly appreciated by those having to treat chronic cases of granulated lids.

The same chemist has prepared other crayons containing a larger proportion of alum, and some composed wholly of the latter substance. Crayons of alum, which I introduced into ophthalmic practice many years since, have been successfully employed in the treatment of the milder forms of conjunctivitis; though they are by no means a substitute for the copper as applications in the more severe cases.

The crayons referred to may be had of Gleason, 1609 Washington Street, or of Codman and Shurtleff, 13 Tremont Street, and should they be called for will doubtless be kept by all druggists. Though not a new invention, these crayons have not hitherto been obtainable in this vicinity, and their convenience and usefulness induces me briefly to call attention to them.

HENRY W. WILLIAMS, M.D.,
Ophthalmic Surgeon to the City Hospital, Boston.
15 *Arlington Street, Feb.* 10, 1870.

RECORD OF MORTALITY IN BERLIN FOR NOVEMBER, 1869. (Translated for this JOURNAL by S. G. WEBBER, M.D.)—Births, 1363 boys, 1283 girls; total, 2646 children, of which 211 boys and 173 girls were illegitimate. 27 times there were twins born.

663 couple were married.

Deaths 1613 (866 males, 747 females). Among these were 182 illegitimate children under 15 years of age.

Under 1 year, 620; between 1 and 5 years, 273; between 5 and 10 years, 41; between 10 and 15 years, 17; between 15 and 20 years, 24; between 20 and 40 years, 243; between 40 and 60 years, 212; between 60 and 80 years, 155; between 80 and 90 years, 22; between 90 and 100 years, 4;—under 15 years, 951; above 15 years, 660;—age unknown, 2.

Born dead, 72 m., 57 f.; lack of vitality after birth, 39 m., 27 f.; old age, 21 m., 29 f.; suicide,* 19 m., 6 f.; accident,† 14 m., 4 f.; puerperal fever, 17 f.; smallpox, 8 m., 5 f.; scarlatina, 5 m., 6 f.; measles, 10 m., 9 f.; pemphigus (blasenausschlag), 1 m., 3 f.; thrush, 1 m., 1 f.; whooping cough, 11 m., 9 f.; gastro-nervous fever and typhus, 27 m., 25 f.; catarrhal fever, 8 m., 6 f.; rheumatism, 2 m., 3 f.; erysipelas, 3 m., 4 f.; diarrhœa and diarrhœa with vomiting of children, 38 m., 25 f.; inflammation of brain, 42 m., 42 f.; gangrenous croup (diphtheritis) 39 m., 38 f.; membranous croup, 12 m., 11 f.; quinsy, 2 m., 2 f.; inflammation of air-passages, 19 m., 25 f.; inflammation of the diaphragm and the lungs, 47 m., 34 f.; of the abdomen, 6 m., 14 f.; of the urinary organs, 8 m., 2 f.; organic diseases of the brain, 8 m., 8 f.; of the spinal cord, 3 m., 3 f.; of the heart, 5 m., 12 f.; of the lungs, 5 m., 5 f.; of the stomach and intestinal canal, 9 m., 3 f.; of the liver, 8 m., 3 f.; other organic disease of the abdomen, 5 m., 4 f.; dropsy in the chest, 3 m., 2 f.; dropsy in the abdomen, 1 f.; general dropsy, 7 m., 8 f.; gout, 1 f.; diabetes, 1 m.; syphilis, 1 m.; scrofula and rachitis, 2 m., 1 f.; tubercle of the brain, 2 m., 3 f.; laryngeal and pulmonary phthisis, 140 m., 102 f.; cancer of the sto-

* Hanging, 10 m., 2 f.; poisoning, 1 m., 3 f.; shooting, 7 m.; drowning, 1 m., 1 f.

† From carbonic oxide gas, 5 m., 4 f.; alcohol poisoning, 1 m.; burns, 1 boy; run over, 1 m.; other mechanical injuries, 4 m.; found dead, 2 boys.

mach, 6 m., 2 f.; of liver, 1 m., 3 f.; of breast, 2f.; of womb, 6 f.; of abdomen, 3 f.; part not mentioned, 1 m., 3 f.; tetanus, 14 m., 14 f.; spasm of the glottis, 1 f.; eclampsia of children, 53 m., 41 f.; delirium tremens, 1 m.; cerebral apoplexy, 33 m., 33 f.; pulmonary and cardiac apoplexy, 9 m., 13 f.; paralysis, 1 m., 1 f.; chronic arthritis, 2 m.; strangulated hernia, 1 m.; noma, 1 f.; suppuration of cellular tissue and glands, 2 m., 5 f.; inflammation of umbilicus, 1 f.; fatal termination of surgical operation (hæmorrhage, pyæmia, &c.) 2 m., 3 f.; other surgical diseases, 1 m.; marasmus, 51 m., 31 f.; paralysis of lungs, 16 m., 12 f.; teething, 6 m., 7 f.; decomposition of the blood (blutzersetzung), 1 f.; unknown, 5 m., 2 f.—*Berliner Klinische Wochenschrift*, January 3, 1870.

Victory of Naval Staff Officers.—The House naval committee, in the matter of the quarrel between the line and staff officers of the navy, has declared by a vote of seven to three against the line officers and the Navy Department. The line insisted that the staff should be treated as a civil institution, while the Department was willing to give the staff assimilated rank. The committee has determined that the staff shall have positive rank just as in the army. The section of the bill relating to medical officers is the only one finished, but the principle has been established, and it will be an easy matter to complete the measure. It is declared that the medical corps on the active list shall consist of 10 medical directors with the rank of captain, 15 medical inspectors with the rank of commander, 35 surgeons with the rank of lieutenant commander, and one hundred assistant surgeons with the rank of ensign. Directors, inspectors and surgeons are to have the present pay and emoluments of surgeons. Assistant surgeons of three years' service who pass an examination for promotion are to rank as masters, and after five years' service as lieutenants. The bill further provides that no promotion to the grade of lieutenant-commander on the active list shall be made until the number is reduced below eighty, which shall thereafter constitute the number of said grade. The number of masters and ensigns in the line is fixed at one hundred in each grade, and ensigns are hereafter to be steerage officers unless assigned to duty as watch and division officers. Representative Stevens, of New Hampshire, is the author of this bill and the reform it embodies, and he has pushed it wisely and untiringly. Whether it can be carried through the House and Senate remains to be seen.—*Boston Daily Advertiser.*

Birthday Dinner of a Distinguished Family in New Hampshire. *Concord, N. H., Feb.* 9.—Prof. Dixi Crosby, of Hanover, well known in his profession, celebrated his 70th birthday at a dinner at the house of his son, Dr. A. H. Crosby, of this city. His brothers, who were present on the occasion, were the Hon. Nathaniel Crosby, of Lowell, Mass., Dr. Josiah Crosby, of Manchester, John Crosby, of Sandwich (the native place of these brothers), Prof. Alpheus Crosby, of Salem, Mass., and Prof. T. R. Crosby, of Hanover.

The first four mentioned are between seventy and eighty years of age, and they are all healthy and vigorous and actively engaged in business. They have two sisters over seventy years of age, both married to physicians.

The father of this family was Dr. Asa Crosby, of Sandwich, one of the earliest physicians in that part of the State, and he was the father of seventeen children. Of his direct descendants more than a dozen are or have been successful practitioners of medicine.

From the Sixteenth Annual Report of the State Lunatic Hospital at Taunton, we take this extract:—

"Three deaths occurred during the winter and spring from pneumonia, an unusual fatality. With this exception no acute disease has prevailed, and the health of the hospital generally has been uninterrupted, except by those chronic diseases which have been incident to or closely connected with the disordered mental condition. Six deaths are reported from old age, a remarkable number. These six patients were respectively in their seventy-eighth, eightieth, eighty-first, eighty-second, eighty-third and eighty-seventh years, and all died without any well-marked form of disease, or at least without any well-defined manifestations.

"The one death from injury, with the public investigation by the legislature into its causes, has been the special event in the history of the hospital during the past year. With the result of that investigation, covering as it did not only this case, but the general management of the hospital and of its inmates, we ought not perhaps to feel dissatisfied, inasmuch as although opinions might and did differ as to the precise amounts of injury in this particular case

received before and after admission to the hospital, yet the principles of humanity upon which it is managed, and the spirit of kindness inculcated and practised by those having it in charge, were fully vindicated and unanimously commended.

"The exercise of our best judgment in selecting and retaining attendants, the closest watchfulness in our power of their acts and characters, and the strictest enforcement both by precept and example of the laws of kindness and humanity, are all that can be reasonably required in those having supervision of the care of the insane, and the presence of these essentials in the management of this hospital was fully recognized both in the testimony of every witness without exception, and in the conclusions of all the committee.

"The matter of the application of force in managing the insane in hospitals, often seems to be little understood and unreasonably treated among the community, although the very construction of our hospitals, with locked doors and barred windows, recognizes the fact, that dangerous manifestations requiring to be met with counter forces are to be expected, and although force when applied outside the hospitals by people little acquainted with the disease, is usually through unnecessary fear extreme. One design of the modern hospital is to substitute as far as possible moral for physical force. The attendant, under the direction of the superior officers, represents the controlling power, combining both the moral and the physical force, with the instruction to use the latter only when the former has proved insufficient, and on no account to use more than is required for the protection of the individual or of others. That these points are simply matters of judgment depending largely upon the individual character of attendants, upon their intelligence, self-control, courage and tact, is undoubtedly true, and that every position in a hospital can be filled at all times with persons possessing these qualities in the highest degree, is readily conceded to be an impossibility. Trial is the only sure guage of adaptability in so peculiar an occupation as this, and consequently attendants are sometimes engaged who prove unfitted and are afterwards discharged, and then the place is to be filled by the selection of the best person to be found for it. Now the number of people willing to engage in this occupation, in some respects far from attractive, is not large, and the selection is in this way also much limited. Still I can in the main speak with the utmost confidence in favor of the character and conduct of the attendants, both those employed now and at former periods. To one who understands fully the nature of their duties it is often a matter of surprise that we are able to obtain so intelligent and good a class as we do, and one cannot realize fully the peculiarly trying positions in which they are often placed without some wonder that they do not oftener give way to the ordinary failings of erring human nature. To give those engaged in the business of caring for the insane a tolerably fair degree of moral support, is a matter of some importance, inasmuch as just so far as the community fail to do this, just so far they lower the class and the general character of those who will be willing to engage in the occupation. The first duty of course is to protect the insane on account of their dependent condition. The second is to protect those having charge of them by endeavoring to appreciate as fully as possible the anomalous and difficult positions in which they are frequently placed, and not allowing prejudice and highly colored statement and hallucination to outweigh reason and probability and fair evidence.

From the report of a case of Urgent Dyspnœa and Engorgement of Heart with Blood—Venesection—Immediate Recovery, by Gopaul Chunder Roy, L.M.S., Teacher in the Medical School, Nagpore, we make the following extract:—

L., aged about 35 years, a police constable, of pretty strong constitution, was brought into the Nagpore City Hospital with extreme dyspnœa and impending "suffocation." Has been ill with bronchitis for the last two months. About four days before admission fever supervened. It was of an intermittent nature, and used to come at the middle of the day with shivering. This day it came as usual, and the cold stage lasted for two hours, but after its cessation he was suddenly taken ill with dyspnœa, which, within a short period, so much increased that, with an anxious apprehension of an imminent death, his friends brought him for relief to the Hospital. The condition in which I then observed him was the following:—The patient was seated on a bench, breathing deep, hurried, and with difficulty; countenance anxious and livid; skin warm; eyes protruding; a rattling noise with the respiration; a feeling of approaching dissolution, and craving to be saved; the veins of the neck prominent, and with each inspiration the external jugu-

lar was found to swell out as big as a finger; heart's sound loud and tumultuous, and its impulse strong. Auscultation over the lungs showed that air was entering freely on both sides; percussion sound normal; had never any such complaint before.

Whilst each moment aggravated the dyspnœa and increased the risk of suffocation, I thought to lose no time in bleeding him. The median cephalic vein of the right arm was opened, and about fourteen ounces of blood were withdrawn in a sitting posture, at interrupted intervals. The heart's action in the meantime was strengthened by diffusible stimulants, so that even no approach to fainting was induced. The effect of venesection was charming. As the blood was flowing the breathing became easier, the veins less prominent, and the heart's action more quiet. Within a quarter of an hour the symptoms disappeared like the extinction of a flame.—*Medical Times and Gazette.*

On a Protective Agent against Moths and other Insects. By Geo. F. H. Markoe. —*Query 16th.*—What is the best substitute for camphor for the protection of woolens from moths and other insect, that will be cheaper and more effective?

In reply to this query the writer would suggest the use of naphthaline as a substitute for camphor. It is an effective protective agent against the ravages of moths and other insects among woolens and in natural history collections.

When purified, naphthaline is obtained in beautiful crystalline masses, possessing a strong peculiar odor, recalling the smell of coal-tar creosote. In its crude state the crystals are of a brown color, and the odor much more intense than when purified.

Naphthaline has been put to a thorough test by Prof. Asa Gray in Harvard College Herbarium, and in the cabinets of the Boston Society of Natural History. The results obtained in these trials were highly satisfactory and conclusively proving the value of naphthaline as a protective against the ravages of the destructive insects that infest woolens and the cabinets of museums.

It is very cheap, being a waste product in the distillation of coal-tar for which no practical use has been found except for fuel and for the manufacture of lampblack. The only objection the writer can find to its use is its strong odor, which to many people is very disagreeable; this fact will alone prevent naphthaline from becoming a popular substitute for camphor, at least so far as its application to the protection of clothing is concerned; but for use in natural history collections it leaves little to be desired.—*Proc. Amer. Phar. Association*, 1869.

Nitric Acid formed during a Thunderstorm.—Mr. Pepper says that when a spark from the great induction coil at the Polytechnic is passed through common air, the result is a red coloration when blown against damp litmus paper. In order to ascertain whether the acid product was nitric acid, the "flaming" spark (nine or ten inches in length) was passed through a bottle containing distilled water, from which another tube passed to the air-pump. On drawing the air slowly over the spark, and passing the former into the bottle, nitric acid was obtained in large quantities, so much so that it could be detected by the smell and taste as well as by the ordinary tests. The popular notion that nitric acid is always produced during a thunderstorm would, therefore, appear to be correct. Also, it is evident that the purifying influence of a thunderstorm is a popular idea founded on facts.—*Medical Press and Circular.*

Admiral Porter, as was to be expected, is opposed to the bill in behalf of staff officers of the Navy, which has been adopted by the House Naval Committee, and has written a letter on the subject. The Committee, however, finds that the positive rank of staff officers has not ruined the army, and seems not to fear it for the navy.

The number of deaths registered in the entire of the Dublin Registration District during the week ending Jan. 15th, represents an annual ratio of 25 in every 1000 of the population by the census of 1861.

DEATHS FROM CHLOROFORM.

At the West Kent General Hospital, a woman, æt. 39, from whose gums and lower jaw malignant fungous growths were being removed by the galvanic cautery, "after being very moderately under the influence of the anæsthetic, administered by Dr. Skinner's flannel mask, for about thirteen minutes, on the third introduction of the heated wire she instantaneously expired." —*British Medical Journal*, Dec. 11, 1869.

Another death from chloroform is reported in the case of a man aged 68, in York County Hospital. Scarcely had a drachm been inhaled when the patient became suddenly rigid, his pulse stopped, and he died. —*Dublin Medical Press and Circular.*

Medical Miscellany.

LEVEE OF THE MEDICAL FACULTY OF HARVARD UNIVERSITY.—The Faculty of the Medical College gave a levee last Tuesday evening, at the Revere House, to the students. There were present also about twenty-five specially invited guests. Among the latter were President Eliot and Prof. Lovering, of Harvard University; Dr. McLaren, Medical Director of this District; Dr. Henderson, Chief Medical Officer of the Navy Yard, Charlestown; Dr. Knight, Surgeon of the Receiving Ship of War Ohio; Dr. Bowen, of the Navy; Mayor Shurtleff, M.D. An hour or two was spent in the interchange of courtesies, at the close of which the company were invited to the adjoining rooms, where refreshments were served. The occasion of the levee was the finishing of the winter term of lectures. The class numbers about three hundred. The Medical Department of the College was never more prosperous than now. The students represent nearly every portion of the Union, and also the British Provinces.

AMPUTATION DURING ANÆSTHESIA WITH CHLORAL.—Dr. Noir (of Brioude, France) has published, in the *Gazette des Hôpitaux* of December 23d, 1869, the case of a man, aged 64, suffering acutely from osteo-sarcoma of the leg. The patient was very anxious to have the limb taken off; and, as a trial, he took about sixty grains of chloral, dissolved in 2 oz. simple syrup, at 8, A.M. Up to nine o'clock, he frequently made efforts at vomiting, and had defective vision; after this came violent excitement, which lasted two hours; he then fell asleep, and soon was so insensible that he could be moved about without waking. This sleep lasted about an hour and a half, and the patient, on coming to his senses, said he felt very well, and asked for food. Pain had of late deprived him of sleep, and he was overjoyed to have had some rest.

Two days after this, the man took seventy-five grains of chloral at eight in the morning, and was uncomfortable for two hours, when he fell into a deep slumber, and underwent amputation of the leg without moving or uttering a sound. After being placed in bed, the patient sank into an alarming coma for one hour; after which, on waking, he was seized with violent delirium and severe vomiting. These fearful symptoms lasted about seven hours, when the poor man passed into a state of complete prostration, and recovered his senses; but did not recollect anything of what had passed, and could hardly speak or move. He took some beef-tea, had a sleepless but quiet night, and the next day all the effects of the chloral had passed off.

Dr. Noir remarks that, in this case, delirium, prostration and coma were so alarming that it would be imprudent to use chloral as an anæsthetic in operations if further experience prove that these dangerous symptoms regularly present themselves. There can, however, be no doubt, he adds, that insensibility was complete during the operation.—*London Lancet.*

MR. MARSH has employed forcible straightening of the bones in a case of rickets. The patient was put under chloroform, and the tibiæ, which were curved forwards, were forcibly straightened. The practice seems novel and promising. —*Dublin Medical Press and Circular.*

MEMBERS of the profession interested in Diseases of the Eye are invited to visit the Ophthalmic Clinique of the Boston City Hospital, at their convenience, on Mondays, Wednesdays and Fridays, from 9 to 11 o'clock.

HENRY W. WILLIAMS, M.D., *Oph. Surgeon.*

ADDENDUM.—To the foot-note on page 102 of the last number of this JOURNAL the following sentence should have been added:—And on the *Dangers of Blistering* in the October number of the same periodical (*The Practitioner*).

TO CORRESPONDENTS.—Communications accepted:—Chloral in Obstetric Practice—Fatal Case of Poisoning by Mercurial Ointment.

BOOKS RECEIVED.—The Cell Doctrine: Its History and Present State. For the use of Students in Medicine and Dentistry. Also a Copious Bibliography of the Subject. By James Tyson, M.D., Philadelphia. With a Colored Plate and other Illustrations. Pp. 150. Published by Lindsay & Blakiston; for sale in Boston by James Campbell.

DIED,—At Woburn, Feb. 12th, Dr. George Osgood Dalton, aged 30 years.—At Newport, R. I., Feb. 3d, Dr. Charles Cotton, aged 81 years.

Deaths in sixteen Cities and Towns of Massachusetts for the week ending Feb. 5, 1870.

Cities and towns.	Number of deaths in each place.	Prevalent Diseases		
		Consumption.	Pneumonia.	Scarlet Fever.
Boston	115	10	4	7
Charlestown	13	4	0	2
Worcester . .	15	4	3	1
Lowell	24	4	0	2
Milford . . .	2	0	0	0
Chelsea . . .	2	1	0	0
Cambridge .	24	4	0	0
Salem	6	1	0	1
Springfield .	8	2	1	0
Lynn	7	0	1	0
Pittsfield . .	4	0	1	0
Gloucester .	11	4	1	0
Fitchburg . .	2	2	0	0
Newburyport	6	2	1	0
Fall River .	10	1	0	0
Haverhill . .	3	0	0	0
	252	39	12	13

Boston reports four deaths from smallpox. Lowell reports five deaths from measles. From all the above places there are reported eleven deaths from croup and diphtheria, seven from typhoid fever, and two from whooping cough.

GEORGE DERBY, M.D.,
Secretary of State Board of Health.

DEATHS IN BOSTON for the week ending February 12, 115. Males, 66—Females, 49.—Abscess, 1—accident, 1—anæmia, 1—apoplexy, 5—asthma, 1—inflammation of the bowels, 1—congestion of the brain, 1—disease of the brain, 4—inflammation of the brain, 2—bronchitis, 4—burned, 1—cholera morbus, 1—consumption, 10—convulsions, 4—croup, 3—debility, 5—diarrhœa, 1—diphtheria, 1—dropsy of the brain, 2—drowned, 1—erysipelas, 1—scarlet fever, 7—typhoid fever, 1—gastritis, 1—hæmorrhage, 1—disease of the heart, 5—homicide, 1—insanity, 1—jaundice, 2—disease of the kidneys, 2—congestion of the lungs, 2—inflammation of the lungs, 4—marasmus, 4—old age, 5—paralysis, 2—peritonitis, 2—pleurisy, 2—puerperal disease, 1—rheumatism, 3—septæmia, 1—smallpox, 4—suicide, 1—tumor, 2—unknown, 9—whooping cough, 1.

Under 5 years of age, 38—between 5 and 20 years, 11—between 20 and 40 years, 23—between 40 and 60 years, 24—above 60 years, 19. Born in the United States, 77—Ireland, 27—other places, 11.